

REMARKS

Claims 1-43 remain pending in the application.

The Applicants respectfully request that the Examiner reconsider earlier rejections in light of the following amendments and remarks. No new issues are raised nor is further search required as a result of the changes made herein. Entry of the Amendment is respectfully requested.

Objection to the Specification

The specification was objected to as allegedly failing to provide antecedent support for claimed subject matter. In particular, the Examiner alleged that the specification fails to provide support for the claimed increasing the size of acceptable nonce values based on the largest nonce value yet seen.

The Examiner is directed to the specification at page 16, beginning at line 19 that discloses:

Returning to FIG. 4, if the received nonce value is the largest yet seen by the controller 205 for the current session, the controller 205 may be configured to adjust a nonce acceptance window (or filter) based on the received nonce value, in step 420. The nonce acceptance window may be configured to set a range of nonce values that may be accepted by the secure communication module. The range may be defined by a user and/or network administrator. Alternatively, the range of the nonce acceptance window may be set dynamically based on time-of-arrival of messages, network traffic, heuristically based on how many "out-of-order" messages are expected within in a given time frame, or other similar parameters. The controller 205 may be further configured to replace the current largest nonce value yet seen with the received nonce value.

Adjusting a nonce acceptance window to set a range of acceptable nonce values can include both increasing and decreasing the range of acceptable nonce values. Even the Examiner acknowledges that one of ordinary skill in the art recognizes that Milliken's alleged varying of a sliding window can include increases and decreases (see Office Action, page 4). Nevertheless, the claims have been carefully reviewed and amended where appropriate to remove the objected to language from the claims and make the objection now moot.

35 USC 112 First Paragraph Rejection of Claims 1-43

The Office Action rejected claims 1-43 as allegedly failing to comply with the enablement requirement under 35 USC 112. In particular, the Examiner alleged that there is no description in Applicants' specification for the claimed increasing the size of acceptable nonce values based on the largest nonce value yet seen.

Claims 1-43 have been carefully reviewed and are amended where appropriate to make the rejection now moot. It is respectfully submitted that claims 1-43 are now in full conformance with 35 USC 112. It is respectfully requested that the rejection be withdrawn.

Claims 1-43 over Gouda and Milliken

In the Office Action, claims 1-43 were rejected under 35 U.S.C. §103(a) as allegedly being obvious over Microsoft article Anti-Replay Window Protocols for Secure IP to Mohamed G. Gouda et al. ("Gouda") in view of U.S. Patent No. 6,978,384 to Milliken ("Milliken"). The Applicants respectfully traverse the rejection.

Claims 1-43 recite **adjusting** a size of a range of acceptable nonce values within an acceptance window or replay mask, where the size of the range is based on a largest nonce value yet seen.

Gouda appears to disclose an anti-replay window protocol that is used to secure IP against an adversary that can insert (possible replay) messages in a message stream between two computers (see Abstract). According to Gouda, a window w of sequence numbers (disclosed in section II) is partitioned into two smaller sub-windows of equal size (see page 313, right col., last paragraph). Each smaller sub-window (the window having the higher sequence number being called the head window, and the other being called the tail window) having u successive sequence numbers, and the larger window having a sequence number range of $w=2*u$, where u is a number of sequence numbers (see Gouda, page 313, right col., last paragraph). Gouda discloses the use of three windows, window w and its sub-windows whose range remains

constant. Neither of Gouda's windows have a **range** that is **adjusted** in **size** based on a **changing value**. Gouda fails to disclose **adjusting a size of a range** of acceptable nonce values within an acceptance window or replay mask, where the **size of the range is based on a largest nonce value yet seen**, as recited by claims 1-43.

The Examiner alleged that Gouda discloses "adjusting a range of acceptable nonce values within the acceptable window, where the size of said range is based on said largest nonce value yet seen (see pages 313 and 314 section V)". The Applicants respectfully disagree.

Gouda at pages 313 and 314 section V describes the three windows discussed above. Moreover, section V of Gouda describes windows **sliding**. However, a sliding window simply changes the values that are acceptable within a particular window. Even after sliding, Gouda's **range** within any particular window **remains constant**. Gouda's **sliding** window that has a **constant range** fails to disclose **adjusting a size of a range** of acceptable nonce values within an acceptance window or replay mask, where the **size of the range is based on a largest nonce value yet seen**, as recited by claims 1-43.

The Examiner relies on Milliken to allegedly disclose a sliding window with a varying size at col. 3, lines 56-61. (see Office Action, page 4) However, Applicants' claims **fail** to recite a sliding window with a varying size. Although Applicants' invention could be used with a sliding window with a varying size.

Milliken at col. 3, lines 56-61 discloses:

The size of the sliding window may be a particular value or varied for a particular security association based upon a variety of factors, such as, the expected data rate (or packet rate) or the expected maximum delay change associated with a packet reordering event in a network.

Milliken discloses a size of a window may be varied. However, Milliken's basis for the varying the size of the window is based on the "expected data rate (or packet rate) or the expected maximum delay change associated with a packet reordering event in a network". Milliken, nor Gouda's disclosure of a **constant** sized window, disclose, teach or suggest use of a **largest nonce**

value yet seen as a basis for adjusting a range of acceptable nonce values within an acceptance window or replay mask, as recited by claims 1-43.

Gouda and Milliken, either alone or in combination, fail to disclose, teach or suggest adjusting a size of a range of acceptable nonce values within an acceptance window or replay mask, where the size of the range is based on a largest nonce value yet seen, as recited by claims 1-43.

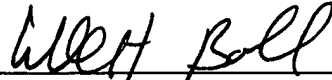
A benefit of adjusting a size of range of acceptable nonce values within an acceptance window or replay mask based on a largest nonce value yet seen is, e.g., to reduce confusion between sessions. Adjusting the size of a range of an acceptance window or replay mask, such as when starting a new session or when resetting a nonce value, permits new advantages. For instance, a previous session's large nonce value may play havoc on a new session starting with small nonce values. When switching sessions to restrict acceptance of a previous session's large nonce values the inventors have discovered that there are advantages to narrow an acceptance window or replay mask. Then once a session is underway, it is found that an acceptance window or replay mask should be increased to prevent unnecessary rejection of data associated with nonce values. The cited prior art fails to disclose or suggest the claimed features.

Accordingly, for at least all the above reasons, claims 1-43 are patentable over the prior art of record. It is therefore respectfully requested that the rejection be withdrawn.

Conclusion

All objections and rejections having been addressed, it is respectfully submitted that the subject application is in condition for allowance and a Notice to that effect is earnestly solicited.

Respectfully submitted,



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